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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,885	04/18/2001	Jun Liu	1941-76	1062

7590 05/26/2005

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EXAMINER

CHANG, VICTOR S

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 05/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/837,885

Applicant(s)

LIU ET AL.

Examiner

Victor S. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 55 and 75-77 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 55 and 75-77 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Introduction

1. The Examiner has carefully considered Applicants' amendments and remarks filed on 4/18/2005. Applicants' amendments to claims 55 and 75, and cancellation of claims 1-3, 53 and 78 have been entered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Rejections not maintained are withdrawn. In particular, since newly added limitations to claims 55 and 75 appear to be new matter, the Examiner notes that the rejection to claims 55 and 75-77 over Brinker et al. (US 5858457) and Cho et al. (US 5504042) are withdrawn for now, so as Applicant's comments regarding the prior art are moot for now. Depending upon the required express support or cancellation of new matter by Applicants in the next reply, the rejections are to be finally withdrawn or reinstated.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
5. Claims 55 and 75-77 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter

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which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

More particularly, it is noted that independent claims 55 and 75, which have been amended to include, *inter alia*, limitations "A ... dielectric film ... prepared by evaporation from silica precursors ~~having greater than eight carbon atoms for every one silicon atom~~ and a surfactant wherein such a film is characterized by: greater than eight carbon atoms for every one silica atom ..." and "having greater than eight carbon atoms for every 1 silica atom", respectively, and Applicants contend that the amendments are supported by "the discussion on pages 23 and 24, with regard to Example 5". However, the cited Example 5 merely teaches that "Mono- and di-alkyl substituted alkoxysilanes can be used as additional silica precursors in the surfactant-containing spin coating solution used to prepare low dielectric constant mesoporous silica films ... A series of solutions were prepared as described in example 1 except that methyl triethoxysilane and dimethyl dimethoxysilane were added to the one mole ratio of tetraethoxysilane. Molar ratios of 0.95 : 0.05 to 0.25 : 0.75 of TEOS to the alkyl-ethoxysilane respectively were prepared ...", nowhere is there an inherent or express teaching that the resultant silica film having "(greater) than eight carbon atoms for every 1 silica atom". As such, the Examiner notes that in the absence of an express support the amendments to claims 55 and 75 appear to be new matter. Applicants are required to provide a proper support or cancel new matter in the next reply. Additionally, the Examiner would like to point out that even in the state of "silica precursor", the aforementioned passage

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teaches that TEOS is formed of a mixture of alkyl-ethoxysilane which clearly has less than eight carbon atoms for every one silica atom on average. For example, methyl triethoxysilane and dimethyl dimethoxysilane have 7 and 6 carbon atoms per silicon atom, even though one of the precursors (tetraethoxysilane) contains 8 carbon atoms per silicon atom, it is not seen how an average of eight (or greater) of carbon atoms per silicon atom can be obtained in a resultant silica film. Furthermore, the Examiner would also like to point out that Applicants' argument "The use of carbon for stability is an alternative to decarboxylation. Brinker and Cho do not teach the use of carbon beyond the use of TEOS." appears to be erroneous and incommensurate with the specification, because in Example 5 of instant invention, Applicants expressly stated that "coated wafers were subjected to the decarboxylation treatment" (specification, page 23, lines 16-17). Clarification is requested.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S. Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H. Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Victor S Chang
Examiner
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5/21/2005